

Meeting abstract

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Prognostic value of IL-6 and IL-10 serum levels and immunonutritional assessment in determining postoperative complications after geriatric surgery

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Background

The onset of postoperative septic complications has recently been associated to serum levels of interleukin (IL) IL-6 and IL-10. Patients with complications have higher serum levels than patients without complication after surgery. IL-6 has been recognized as early marker of postoperative septic events. Furthermore IL-6 increases with age, especially if there are associated diseases. It is a sign of functional deterioration of different organs.

The dysregulation in interleukin production, anesthetic drugs, hemorrhage and transfusions may lead to the onset of postoperative complications. The latter are more frequent in oncologic patients.

The aim of our study is to evaluate pre- and postoperative profile of some inflammatory markers (IL-6, IL-10 and C-reactive protein CRP) and immunonutritional assessment (through albumin serum levels and lymphocyte count) in a group of elderly patients undergone to major intrabdominal surgery. We related the data obtained to the onset of postoperative complications.

Materials and methods

We evaluated 55 patients, 25 males and 30 females, aged ≥ 70 (median 75, range 70–89). The only preoperative criterion for inclusion was non urgent major abdominal surgery, the exclusion criteria were: urgent abdominal sur-

gery, chronic therapy with antiinflammatory drugs, therapy with steroid and/or immunosuppressor drugs during 30 days before the admission. For each patient we collected three peripheral venous blood samples, at preoperative time 0 (t0), and then at first (t1) and seventh postoperative day. Cytokine evaluation on serum samples was obtained by ELISA method with "sandwich" technique. For each patient we considered the length of postoperative time, any transfusion and any postoperative complication. Among the latter we considered: surgical wound infection; urinary tract infection; respiratory infection/respiratory failure; SIRS and/or sepsis; anastomotic leakage; peritonitis.

Results

We observed 12 complications, including one death, corresponding to 21.8% of all evaluated patients (Table 1).

All subjects at t1 showed an elevation of IL-6 levels, more consistent in the complicated ones (137.69 ± 91.13 pg/ml vs 108.86 ± 52.62 pg/ml). IL-10 presented the same trend of IL-6, moreover it showed lower basic levels (t0) in complicated patients (19.02 ± 16.73 pg/ml vs 9.31 ± 11.17). The CRP values didn't differ at any time between the two groups. The lymphocyte count showed a higher basic level (t0) in complicated patients, but a deeper decrement at t1 in the same group. Finally, albumin serum levels were the

Table 1:

| Postoperative complications | Number of patients |
|-----------------------------|--------------------|
| Anastomotic leakage | 2 |
| Abdominal wall necrosis | 1 |
| Respiratory failure | 3 |
| Urinary tract infection | 1 |
| Surgical wound infection | 1 |
| Respiratory infection | 1 |
| Sepsis | 1 |
| Septic shock, CID | 1 |

same at t0 for all patients and they decreased much more than in the complicated ones.

Conclusion

In the group of elderly patients observed, as in general population according to published data, IL-6 and IL-10 may be referred as prognostic markers regard to postoperative complication. It would be moreover useful to identify a cut-off value to select the subjects with a higher postoperative risk. About this topic, CRP trend and lymphocyte count have no role because of lack of sensitivity.

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